

Name: \_\_\_\_\_

Date: \_\_\_\_\_

A2CC: Solving Higher Degree Polynomials

Do Now:

1. Solve by completing the square :  $3x^2 + 1 = 2x$

Exercises:

On a **SEPARATE SHEET OF PAPER**, find:

- (a) the complete factorization of  $p(x)$ .  
(b) The complete solution set for  $p(x)$ .

1.  $p(x) = x^4 - 13x^2 + 36$

2.  $p(x) = x^5 - 10x^3 + 21x$

3.  $p(x) = (x^2 + 5x - 7)(x + 2)$

4.  $p(x) = x^4 - 20x^2 + 64$

5.  $p(x) = x^5 - 12x^3 + 32x$

6.  $p(x) = (x^2 + 4x + 1)(x^2 - 9)$

7.  $p(x) = x^4 - 29x^2 + 100$

8.  $p(x) = x^5 - 10x^3 + 9x$

9.  $p(x) = (x^2 + 9)(x + 3)$

10.  $p(x) = x^3 - 2x^2 + 9x - 18$

11.  $p(x) = x^3 + 7x^2 + 10x$

12.  $p(x) = (x^2 - 1)(3x^2 + 2x + 1)$

13.  $p(x) = x^5 - x^4 - 2x^3$

14.  $p(x) = x^4 + 5x^2 + 4$

15.  $p(x) = 16x^4 - 1$

16.  $p(x) = x^4 - 81$

17.  $p(x) = x^3 + 6x^2 + 11x + 6$  (hint: -1 is one of the roots)

18.  $p(x) = x^3 - 3x^2 + 7x - 10$  (hint: 2 is one of the roots)

19.  $p(x) = x^3 - x^2 - 8x + 12$  (hint: -3 is one of the roots)

20.  $p(x) = x^3 + x^2 - 21x - 45$  (hint: 5 is one of the roots)

21.  $p(x) = 2x^3 - 5x - 3$  (hint: -1 is one of the roots)

